Space Weather Forecast

Issued on Tuesday, 24 October 2023 at 01:22 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: No significant activity.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity has been Low with two Common-class flares in the past 24hrs, the largest peaking at 23/1957 UTC. There are currently up to three sunspot regions on the visible disc, all of which are small and magnetically simple.

Two Coronal Mass Ejections (CMEs) were observed from 'prominence eruptions' (arcs of plasma) in the past 24hrs, one from over the northwest limb around 23/0900 UTC, and the other from the southwest limb around 23/1315 UTC. These are both likely far-sided and missing Earth, pending analysis. No other Earth-directed CMEs have been observed.

Solar Wind / Geomagnetic Activity: The solar wind was at ambient levels. The Interplanetary Magnetic Field (IMF) was at weak levels. The resulting geomagnetic activity was Quiet (Kp0-1).

Energetic Particles / Solar Radiation: No solar radiation storms were observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Solar activity is expected to remain low or very low, with a chance of isolated Common-class flares that may increase a little through the period.

Solar Wind / Geomagnetic Activity: No significant CMEs feature in the forecast. The forecast is for mainly Quiet (Kp0-2) geomagnetic activity. Up to two fast wind streams are due, a low confidence and low impact feature perhaps due early on Day 1, and then a more probable fast wind stream possibly arriving from Day 3 onwards, with a peak Slight Chance of G1 Minor Storm (Kp5) levels.

Energetic Particles / Solar Radiation: No solar radiation storms are likely.

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

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Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	1	5	20	20
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	2	2	5	10
Very Active	R3 to R5 X	No	1	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	1	1	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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